

Chapter I.
Description.
Geology.

old red sandstone, secondary trap, and alluvial. The granite tracts have the same general features as granite countries in other parts of the world. The soil is naturally barren though often covered with forest. At the falls of Gersappa a variety of granite occurs later than the common Indian granite. It is made of small grains of white felspar, quartz, and mica. In some instances it is slaty, and is associated with gneiss and hornblende schists. All occur within a few hundred yards. Among hornblendes one is almost pure hornblende, a second has scattered crystals of felspar, a third has mica and felspar, a fourth has more of the character of actinolite than hornblende, and a fifth seems to be almost entirely composed of mica. All these varieties of hornblende, with the gneiss and granite, pass insensibly into each other. They are distinctly stratified, have a dip of about 30°, and a direction nearly east-south-east. They form the sides of the thousand feet deep chasm over which the river dashes at the falls of the Gersappa river. Of transition rocks the chief are clay slate, chlorite slate, talc slate, limestone, grey wacke, gneiss, and quartz. The strata appear to have a general direction of north-west and south-east. Most of them are highly inclined and in many instances they are vertical. The leading colours of the clay slate are grey, blue, greenish red, and white, grey being the commonest. In the Sahyádris and at several places on the west coast, chlorite slate occurs under the claystone and conglomerate. Its commonest colour seems to be a light greenish grey. It has a slightly greasy feel, is hard, and, when fairly compact, makes a good building stone. Talc slate is generally mixed with quartz, but a few miles from the falls of the Gersappa it is unmingled, with a fine slaty structure and greenish or reddish colour.

Iron clay stone or laterite is found in great abundance, especially along the coast and below the Sahyádris. It consists of claystone, more or less laden with iron, and has a perforated and cellular structure, with small masses of clay quartz or iron-stone imbedded in it. In its native state it is so soft that it can be easily cut with a hatchet and spade into square masses like bricks. When these square masses are exposed to the air, they harden, and, when not subject to constant moisture, answer admirably as a building stone. This rock occurs chiefly in the west of the district and on the tops of the Sahyádris. Scarcely any other rock is found in Goa and it stretches without a break from Goa to Honávar. In different places it rests on granites, transition rocks, trap, and sand-stone, but has no distinct structure. Many iron-clay hills are nearly bare and have a smooth red or black colour. Crumbled iron-clay makes poor soil, and, unless it is constantly worked, is apt to check and stifle growth.

At Yán near Devimani, on the road from Uppinpatna to Sirsi, tall, black, obelisk-like rocks, streaked with red, rise about 200 feet out of the plain. When broken, the stone sparkles, perhaps with pyrites. The natives find much lime near these rocks which they prepare and eat with betelnut.

Dr. Leith describes the south, south-west, west and north-west of Kánara as composed of hypogene schists (gneiss and micaceous

schist) with a general dip eastward, an inclination of about 30°, and a line of strike varying 40° or 50° from 0° to 300° or 320°. In his opinion the upheaving agent was a rock, like a small-grained syenite, but which from the absence of quartz was really a diorite. The granite seemed to have burst out after the diorite, and, though it formed mountain masses, it was less widespread. In a cutting near Baitkul, Dr. Leith found small pieces of diorite enclosed in granite. Later than those two fire rocks, was a third, a trap, like the dolerite found near Bombay. In the form of dykes this trap had cut through both the older fire rocks and the schists, and was spread over several miles. Laid on the schists, and hiding them, except in an occasional ridge or scarred watercourse, was a quartz rock crumbling into red gravel, having masses of milky quartz with an occasional seam or bed of red clay shale, twisted and broken like the beds at Hubli and Dhárwár. This quartz rock was on the surface, from the town of Gersappa up the hills to the falls, and on to Siddápur, Sirsi, Sánda, and to four or five miles beyond Yellápur. Then came a break occupied by the later trap and the blue clay slate on which Haliyál stands. The quartz again appeared on the west of the Bárci and ran to Jagalbet and Supa, but a few miles west gave way to laterite. North of the Usáda near Jagalbet, trap was spread over all other rocks, except that here and there it was covered by laterite. Along the coast laterite was the commonest surface rock and it was widely spread along the crest of the Sahyádris, while in more inland parts it capped the hills in detached patches. In a spur, descending to Supa from the high ridge on which Jagalbet stands, Dr. Leith found a rich ore of specular iron, a siderocriste.

The native almanacs divide the year into six seasons, beginning with the middle of June. The Sanskrit names for these six seasons are, from mid-June to mid-August, *Jeshth* and *Ashádh*, hot-time or *grishma*; from mid-August to mid-October, *Shrávan* and *Bhádrapad*, rain-time or *varsha*; from mid-October to mid-December, *Ashvin* and *Kártik*, autumn-time or *sharad*; from mid-December to mid-February, *Mārgashirsh* and *Pausha*, snow-time or *hemant*; from mid-February to mid-April, *Māgh* and *Phálgun*, ice-time or *shishir*; and from mid-April to mid-June, *Chaitra* and *Vaishákh*, spring-time or *vasant*. These divisions of the year belong to a northern country, to the Panjáb if not to some land still further north. The Kánarese divide the year into the same six pairs of solar months, but their names are different and are suited to the local climate. With them mid-June to mid-August is wind-time or *gáli-kál*, mid-August to mid-October rain-time or *male-gál*, mid-October to mid-December moon, that is cool-time *beldingalu-gál*, mid-December to mid-February cold-time or *chhalí-gál*, mid-February to mid-April spring-time or *chiguridu-gál*, mid-April to mid-June hot-time or *bisilu-gál*. Even this Kánarese classification hardly suits the climate of North Kánara. Perhaps the most convenient arrangement is into four seasons, two hot and damp months October and November; three cool months December January and February; three hot months March April and May; and four wet months June July August and September.

Chapter I.
Description.
Geology.

Seasons.

Chapter I.
Description.
 Seasons.

In the hot and damp season the mean temperature on the coast stands both in October and November at $80\cdot1^{\circ}$ compared with $79\cdot2^{\circ}$ in September and with $78\cdot4^{\circ}$ in December; in the uplands the mean temperature for October is $76\cdot3^{\circ}$ and for November $74\cdot9^{\circ}$. Except showers which accompany occasional thunderstorms in the early part of October there is no rain. There are occasional soaking dews both in October and November. A light sea breeze blows during the day from eleven till sunset, and in November the land wind sets in from eleven in the evening and lasts on till the morning.

In the cool months on the coast the mean temperature goes down from $80\cdot1^{\circ}$ in November to $78\cdot4^{\circ}$ in December and to $75\cdot9^{\circ}$ in January and rises to $78\cdot2^{\circ}$ in February; in the uplands it is $73\cdot1^{\circ}$ in December, $72\cdot7^{\circ}$ in January, and $75\cdot4^{\circ}$ in February. Except occasional mango showers about the middle of January there is no rain. The uplands at night and early morning are often wrapped in mist. Dews are commoner and heavier in December and January, but cease with the setting in of a hotter air in February. A light sea breeze blows during the day, and at night the land wind freshens striking very chill in December and January, and warming to a hot wind towards the close of February when it lasts most of the day.

In the hot season, March shows a rise in mean temperature from $78\cdot2^{\circ}$ in February to $81\cdot4^{\circ}$ on the coast and from $75\cdot4^{\circ}$ to $80\cdot7^{\circ}$ in the uplands, April on the coast shows a further rise to $84\cdot2^{\circ}$ and in the uplands to $82\cdot3^{\circ}$, and May on the coast a further rise to $84\cdot3^{\circ}$ and in the uplands a fall to $81\cdot2^{\circ}$. The fierce March sun beating on the ocean raises a large body of vapour which increases as the sun passes north. At the same time the greater heat inland draws a growing quantity of cool sea air, and strengthens the sea breeze which begins sooner and lasts stronger. As the sea breeze freshens, it carries inland more and more moisture. So long as the sun is up and the air is warm the moisture does not show. But soon after sunset a cool air rises from the forests and thickens the vapour into a close mist. With a strong sea breeze these mists are swept over the hill top. But they are driven back when the easterly land wind sets in and cling to the lower slopes, from which, in the morning, the tops of the hills rise bright and clear like islands in a sea of milk. As the sun rises, the air of the valleys is warmed, and when the sea breeze again sets in, the mists float up the chasms and ravines and disappear. Towards the end of March and in April the growing strength of the sea breeze stifles the land wind even on the hill tops, and the mists rest there instead of in the valleys. During March and April this happens only at intervals. But in the early days of May, with a fresher and more moisture laden sea breeze, after dark the hill tops are generally wrapped in thick fog. About nine in the morning the vapour fades in the heated air, and in the afternoon again gathers as clouds. The wind becomes fitful, sometimes blowing from the south, with short thunderstorms in the evening or during the night. These thunderstorms are generally over by about the 20th of May. Then the west wind again freshens and blows all day long while the clouds bank up in the south-west ready to be dashed against the hills.

Chapter I.
Description.
Seasons.

The wet months show a marked fall in temperature. On the coast the mean temperature passes from 84.3° in May to 81.6° in June, and in the uplands from 81.2° to 76.1° ; in July there is a further fall on the coast to 79.1° and in the uplands to 73.8° ; August has a slight rise on the coast to 79.7° and in the uplands to 74.1° ; September shows a slight fall to 79.2° on the coast and in the uplands a slight rise to 74.3° . Almost the whole supply of rain in the year, about 130 inches along the coast and sixty-five inches in the uplands, falls in those four months and most of it in June and July.

Early in June the clouds, which have been steadily gathering heavier and heavier in the west, are at last driven by a strong south-west wind, with awful thunder and lightning, against the western slopes of the hills, and the country is flooded. The rain in violent squalls is heaviest in June and July. Towards the end of August the rain and wind lighten and end in September or in early October in occasional showers. During most of this time the crests of the Sahyádris and the other higher hill tops are hid by a thick soaking mist. Among the wooded hills the rain begins to fall sooner and lasts longer than along the open coast. In the eastern uplands the climate during the rains is very agreeable. Even in the lands of the same villages, there is a marked difference between the rainfall in the west and in the east. The clouds seem drawn to the wooded heights and fall in frequent showers, while, in the lower and barer east, they float inland far overhead.

The rain and temperature returns of three coast stations, Kárwár Kumta and Honávar, during the ten years ending 1879, show an average fall of 129.45 inches, and in Kárwár a mean monthly temperature varying from 84.3° in May to 75.9° in January and averaging about 80° . During the same ten years (1870-1879) the average rainfall for four upland stations, Haliyál Yellápur Sirsi and Siddápur, was 79.28 inches, and in Sirsi the mean monthly temperature varied from 82.3° in April to 72.7° in January and averaged 76.2° . During the ten years ending 1879 details of warmth are available for two stations, Kárwár on the coast and Sirsi in the uplands. These returns show that one of the most notable features in the climate of Kánara is its equableness. On the coast the extreme variations of average monthly maxima and minima are from 93.1° in March 1877 to 62° in January 1870, a difference of 31.1° ; in the mean average monthly returns the variations are between 84.3° in May and 75.9° in January, a difference of 8.4° . In the uplands the extreme variations of average monthly maxima and minima are from 93.7° in May 1877 to 60° in January 1874, or a difference of 33.7° ; in the mean average monthly returns the variations are between 82.3° in April and 72.7° in January, or a difference of 9.6° .

As regards warmth the order of the months beginning with the hottest is, on the coast, May 84.3° , April 84.2° , June 81.6° , March 81.4° , October and November 80.1° , August 79.7° , September 79.2° , July 79.1° , December 78.4° , February 78.2° , and January 75.9° . The corresponding order in the uplands is April 82.3° , May

Chapter I.
Description.

Seasons.

81.2°, March 80.7°, October 76.3°, June 76.1°, February 75.4°, November 74.9°, September 74.3°, August 74.1°, December 73.1°, and January 72.7°.

Except that May is slightly hotter than April on the coast and slightly cooler in the uplands and that September is slightly cooler than August on the coast and slightly warmer in the uplands, both above and below the Sahyádris, the months have the same relative character for warmth. In both tracts January is the coldest with in the coast tract a mean temperature of 75.9° and in the upland tract of 72.7°. In both tracts February is warmer than January, the coast mean being 78.2° and the upland mean 75.4°. In both March is warmer than February, 81.4° in Kárwár and 80.7° in Sirsi, the rise being 5.3° in the upland and 3.2° in the coast tract. April is again warmer than March, 84.2° in Kárwár and 82.3° in Sirsi, the rise being greater in the coast tract, 2.8° against 1.6°. May varies in the coast and in the upland tracts. Along the coast it shows a slight rise from 84.2° to 84.3°, while in the uplands there is a slight fall from 82.3° to 81.2°. June shows a fall of 2.7° (84.3°-81.6°) along the coast and of 5.1° (81.2°-76.1°) in the upland tracts. July shows a further fall of 2.5° (81.6°-79.1°) along the coast and of 2.3° (76.1°-73.8°) in the uplands. August is warmer in both tracts by 0.6° (79.1°-79.7°) on the coast and by 0.3° (73.8°-74.1°) in the uplands. September is slightly cooler by 0.5° (79.7°-79.2°) on the coast and slightly warmer by 0.2° (74.1°-74.3°) in the uplands. October is hotter in both by 0.9° (79.2°-80.1°) on the coast and 2° (74.3°-76.3°) in the uplands. November shows no change (80.1°-80.1°) on the coast, but is cooler by 1.4° (76.3°-74.9°) in the uplands. December is lower by 1.7° (80.1°-78.4°) on the coast and by 1.8° (74.9°-73.1°) in the uplands.

Along the coast the month of highest average maxima was April with 89.9°, the next was May with 89°, then March 88.7°, then November 86.6°, then December 86.3°, then February 86°, then June 85.7°, then January 84.9°, then October 84.8°, then August 83.3°, then September and July both 82.8°. In the uplands the month of highest average maxima was March with 90.1°, next came April with 90°, then May 88°, then February 84.8°, then November 82°, then January 81.9°, then December 81.4°, then October 81.3°, then June 79.5°, then September 77.4°, then August 76.8°, then July 76.2°.

On the coast the month of lowest average minima was January with 67°, next was February with 70.4°, then December with 70.6°, then November 73.6°, then March 74.2°, then July 75.4°, then October 75.5°, then September 75.6°, then August 76.1°, then June 77.5°, then April 78.5°, then May 79.6°. In the uplands the month of lowest average minima was January with 63.5°, next was December with 64.9°, then February with 66.1°, then November 67.8°, then September and October both 71.3°, then March and July 71.4°, then August 71.5°, then June 72.8°, then May 74.5°, and last April 74.6°.

In the ten years ending 1879 on the coast the month with highest average maxima was March 1877 with 93.1°, and the month with

Chapter I.
Description.
Seasons.

lowest average minima was January 1870 and January 1871 both with 62°. In the uplands during the same period the month with highest average maxima was May 1877 with 93·7°, and the month with lowest average minima was January 1874 with 60°.

A comparison of the average mean, average range, and average maxima and minima on the coast and in the uplands shows that the mean warmth in every month in the year is greater on the coast than in the uplands. The excess of warmth is greatest (5·6°) in August and least (0·7°) in March; it averages about 3·9°. The average maxima are higher on the coast than in the uplands, except in March and April when they are slightly higher (1·4° in March and 0·1° in April) in the uplands. The highest excess of maxima on the coast over the uplands is 6·6° in July. In every month in the year the average minima are higher on the coast than in the uplands. The greatest excess is 5·8° in November, the least excess is 2·8° in March, the average excess is about 4·4°. The average range of warmth during the cold months is slightly greater (0·8° in December, 0·5° in January, and 3·1° in February) in the uplands than in the lowlands. In the hot months the variation is markedly greater (March 4·2°, April 4·0°, and May 4·1°) in the uplands than on the coast. In the wet months the variation is slightly greater on the coast (June 1·5°, July 2·6°, August 1·9°, September 1·1°) than in the uplands. In October and November the variation is slightly greater in the uplands (October 0·7° and November 1·2°) than along the coast.

Returns are available for Kumta for the five years ending 1879. A comparison of the Kumta and Kárwár returns shows a very close similarity in average means. January is 76·5° in Kumta compared with 75·9° in Kárwár; February is 77·5° compared with 78·2°; March is 81·3° compared with 81·4°; April is 84·5° compared with 84·2°; May is 84·9° compared with 84·3°; June is 82·2° compared with 81·6°; July is 80·5° compared with 79·1°; August is 79·3° compared with 79·7°; September is 78·7° compared with 79·2°; October is 79·7° compared with 80·1°; November is 79·4° compared with 80·1°; and December is 78·6° compared with 78·4°.

The following statement gives the details:

Kánara Thermometer Readings, 1870-1879.

YEAR.	January.		February.		March.		April.		May.		June.	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
KÁRWÁR.												
1870	62	84	63	86	71	89	75	91	76	90	77	91
1871	62	81	63	86	71·6	89·1	75·7	91·7	76·7	92	74	91·1
1872	67	86	69·1	87·7	69·8	91	78	91	80·4	88·4	72	86·5
1873	67·1	83·4	74	86·1	75·3	85·3	79·7	97·8	79·8	87·3	77·8	83·6
1874	67·8	82·8	70	83	73·6	86·8	80·3	89·3	79	86·6	76·7	88·1
1875	71·6	83	74·5	84·6	79·6	87	83·2	89	83	89	80·7	89·1
1876	69·3	88·4	67	89	75	90·2	77·9	90·1	79	89	81	86·3
1877	68·9	90·3	70·7	89·3	74·6	93·1	77·7	92·2	80·6	91·2	80·7	85·6
1878	69·8	86·4	74·6	83·5	77·4	90·5	80	89	84·9	91·1	81	86·4
1879	63·1	85	68·8	86	76	87·1	78	88·7	77·3	87·4	74·3	82·3
Average { Max. ...	...	84·9	...	86	...	88·7	...	89·9	...	89	...	86·7
{ Min. ...	67	...	70·4	...	74·2	...	78·5	...	79·0	...	77·5	...
Average Range ...	17·9		15·6		14·5		11·4		9·4		8·2	
Mean Temperature.	75·9		73·2		81·4		84·2		84·3		81·6	

Kánara Thermometer Readings, 1870-1879—continued.

Chapter I.
Description.
Seasons.

YEAR.	July.		August.		September.		October.		November.		December.	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
KARWAR—continued.												
1870	75	84	74	85	74	84	74	84	72	87	69	87
1871	74.3	84.3	74.7	85.6	74.3	84.4	74	84	72.8	87.8	69	87
1872	67	82	73.4	82.1	74	82.3	73.8	83.6	70	86.5	70.8	84.4
1873	77.5	82.2	77	82.5	74.9	83.4	74	84	72	85.8	69.7	85.1
1874	75.6	80.2	76.5	80.9	76.5	80	74.4	85.7	77.0	85.1	75.2	85.7
1875	76.3	81.3	78	82.2	78.1	82.4	78.3	83.9	79.4	86.7	73	87
1876	74	81.8	76.8	84.9	75.7	83.5	75	88.2	70	90	67	91
1877	80	86	78.8	84	77.6	83.8	78.4	84.6	76.8	88.9	73.3	88.5
1878	80	83	79	82	79	82	81	86	75.9	84.2	73.1	83.8
1879	75.2	83.3	74	84.3	73.2	82.7	73	84	69.7	81.6	60.3	84.4
Average { Max. ...	...	82.8	...	83.3	...	82.8	...	84.8	...	86.6	...	86.3
Min. ...	75.4	...	76.1	...	75.6	...	75.5	...	73.6	...	70.6	...
Average Range ...	7.4		7.2		7.2		9.8		13		15.7	
Mean Temperature.	79.1		79.7		79.2		80.1		80.1		78.4	

YEAR.	January.		February.		March.		April.		May.		June.	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
SIRSI.												
1870	65	81	68	85	70	88	69	90	73	88	73	78
1871	63	81	64	82	68	83	73	93	74	81	71	79
1872	63	82	65	80	72	91	74	89	73	86	71	79
1873	62	80	68	82	69	87	74	89	70	89	71	76
1874	60	82	67	83	71	89	75	89	73	84	71	78
1875	61.9	80	66.5	80	72.7	92.6	75.6	87.6	76	90	74	80
1876	63.8	84.6	65.6	84	72.6	92	74.9	90.3	77.5	91	74.4	83.8
1877	64	83.7	67.8	80.6	74.7	92	74.9	93.1	76.3	93.7	75	82.1
1878	64.8	83.1	68	88	71.7	91.8	76.6	87.1	76.6	91.8	74.9	82.4
1879	65.9	81.7	66.5	85.9	73.1	91	76.6	92.6	75.3	86.2	72.9	77.7
Average { Max. ...	...	81.9	...	84.3	...	90.1	...	90	...	88	...	79.5
Min. ...	63.5	...	66.1	...	71.4	...	74.6	...	74.5	...	72.8	...
Average Range ...	18.4		18.7		18.7		15.4		18.6		6.7	
Mean Temperature.	72.7		75.4		80.7		82.3		81.2		76.1	

YEAR.	July.		August.		September.		October.		November.		December.	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
SIRSI—continued.												
1870	70	74	71	76	71	76	70	77	68	81	62	79
1871	69	75	70	76	71	77	70	81	69	82	63	81
1872	70	75	70	77	70	80	71	77	67	82	65	81
1873	72	76	74	76	71	75	71	78	66	81	68	80
1874	70	74	69	76	70	75	72	77	63	80	63	81
1875	72	77.7	72	77	72	78	70.7	93	67.8	83.5	65	82.7
1876	72.1	74.6	71.9	77.7	71.6	79.9	71.7	86.4	67.2	85.3	64	84
1877	73.2	80	73	80	73	80.9	72.7	80.6	69	82.3	69.0	83.4
1878	73.5	77.6	72.8	77	72.4	77.9	73.3	81.6	69.9	82.6	65.9	81.3
1879	72.6	79.1	71.6	76	71.5	74.5	71.3	81.4	66.6	80.5	64	80.6
Average { Max. ...	...	76.2	...	76.3	...	77.4	...	81.3	...	82	...	81.4
Min. ...	71.4	...	71.5	...	71.3	...	71.3	...	67.8	...	64.9	...
Average Range ...	4.8		5.3		6.1		10		14.2		16.5	
Mean Temperature.	73.3		74.1		74.3		76.3		74.9		73.1	

Kánara Thermometer Readings, 1870-1879—continued.

Chapter I.
Description.
Seasons.

YEAR.	January.		February.		March.		April.		May.		June.	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
KUMTA.												
1875	68.6	84.7	69.8	85	75.3	87.2	79.2	90	80.9	90	79.2	87
1876	69.6	85.9	68.9	84.8	75	88.3	78.9	88.3	83	83.5	78.3	90.3
1877	71.2	84.5	72.7	84.1	76	86.6	80.3	88.6	82.4	88.9	80.9	85.9
1878	74.8	85.5	74	84.9	76.9	86.5	85.2	87	80.9	88.4	79.2	85.2
1879	68.1	82.9	67.7	83.5	75.8	86	78.9	89.8	79.6	87	73.6	80.2
Average { Max. ...	...	84.7	...	84.5	...	86.9	...	88.9	...	88.5	...	85.7
Average { Min. ...	68.4	...	70.6	...	75.8	...	80.1	...	81.3	...	78.8	...
Average Range ...	16.3		13.9		11.1		8.8		7.2		6.9	
Mean Temperature ..	78.5		77.5		81.3		84.5		84.9		82.2	

YEAR.	July.		August.		September.		October.		November.		December.	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
KUMTA—continued.												
1875	78.2	84.9	77.8	83.1	75.2	83.2	76.2	87.2	72.8	88.2	69.8	87.2
1876	77.8	82.2	78.2	80.2	77.6	80.5	75.4	83.1	72.7	85	74.6	84.5
1877	80.7	85.7	79	82.4	77	80.4	76.4	82.6	78.7	84.3	77.6	85.7
1878	77.6	81.3	77.9	79.4	77	80.6	77.1	83.1	72.6	83.2	69.9	81.8
1879	77.4	80.3	76.6	79	76.1	80.1	73	81.9	73.2	84.2	70.9	84.3
Average { Max. ...	...	82.9	...	80.8	...	80.9	...	83.3	...	84.9	...	84.7
Average { Min. ...	78.2	...	77.8	...	76.5	...	76.2	...	74	...	72.6	...
Average Range ...	4.7		3		4.4		7.1		10.9		12.2	
Mean Temperature..	80.5		79.3		78.7		79.7		79.4		78.6	

Of the two divisions of the district, the upland and the lowland, the lowland or coast tract has the heavier rainfall. In the upland parts though local position has considerable influence, distance from the sea and from the crest of the Sahyádris are the chief points that determine the rainfall, the fall being lighter the greater the distance from the crest of the Sahyádris.¹ Details of rainfall are available for seven stations for the ten years ending 1879. Of the seven stations three, Kárwár, Kumta, and Honávar are on the coast, and four, Siddápur, Sirsi, Yellápur, and Haliyál are in the uplands. The returns show a much higher rainfall on the coast than in the upland stations, and a considerable variety in the returns of the different stations both along the coast and in the uplands. In the coast stations, at Kárwár the fall varied from 192.73 inches in 1878 to 78 inches in 1873, and averaged 116.6; in Kumta about thirty miles south of Kárwár, the fall varied from 201.28 inches in 1878 to 96.2 inches in 1877 and averaged 132.45; in Honávar about ten

Rainfall.

¹ In 1865 Dr. Leith noticed that in the upland stations the character of the locality had often almost as much to do with the rainfall as the distance from the sea and the Sahyádris crest. Sirsi and Supa, though about the same distance from the sea and the crest of the Sahyádris had a difference of about 45 inches in their rainfall. Sirsi in an open wind-swept country had a fall of about 76 inches, and Supa at the western foot of a high steep range had as much as 121 inches.

Chapter I.
Description.
Rainfall.

miles south of Kumta, the fall varied from 184·61 in 1878 to 91·48 inches in 1877, and averaged 139·85. In the upland stations in Haliyál, which is about fifty miles north-east of Kárwár and thirty from the crest of the Sahyádris, the fall varied from 82 inches in 1872 to 29·7 inches in 1871, and averaged 47·8 inches; in Yellápur, about forty miles east of Kárwár and six from the crest of the Sahyádris, the fall varied from 139 inches in 1872 to 67·53 inches in 1877, and averaged 90·57 inches. In Sirsi, about thirty-five miles east of Kumta, the fall varied from 110·12 inches in 1874 to 64·82 in 1871, and averaged 83·85 inches. In Siddápur, about thirty-three miles east of Honávar, the fall varied from 116·60 inches in 1873 to 73·76 in 1876, and averaged 95·62 :

Kánara Rainfall, 1870-1879.

Sub-Divisions.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	Average.
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	Inches.
Kárwár ...	102·64	82·74	133·20	78	151·34	110·34	86·9	87·52	192·73	129·1	116·6
Kumta ...	120·10	108·89	164·64	113·24	169·4	119·4	120·19	98·2	201·28	122·87	132·45
Honávar ...	159·63	142·77	178·40	94·94	161·66	133·39	105·89	91·43	184·61	145·73	139·85
Sirsi ...	71·83	64·82	94·16	84·25	110·12	89·61	64·97	63·21	98·75	91·81	83·85
Haliyál ...	42·79	29·70	82	43·21	53·76	43·73	33·43	33·86	59·15	40·22	47·8
Yellápur ...	74·27	71·10	139	77·70	103·79	97·60	71·35	67·53	97·50	101·9	90·57
Siddápur ...	103·5	93·39	80·6	116·60	103·25	95·13	73·76	81·4	96·23	107·3	95·62
Average ...	96·39	85·41	125·2	86·85	121·9	98·45	79·73	75·17	132·89	106·81	100·96

The climate of different parts of the district varies greatly in healthiness. The coast districts, though moist, are healthy. But the forest tracts, especially the upland forests, are always feverish, and at intervals are visited by specially fatal outbreaks. The most unhealthy time in the forests is the first two months of the rains and the four cold weather months. The valleys of the Kálinadi and of its feeders are tracts whose fever has a specially bad name. Bad water, stagnant or laden with vegetable matter, and the want of free currents of air are supposed to be the two chief causes of the unhealthiness of the forests.